

## Patent Claims

1. An electro-optical module for transmitting or receiving optical signals of at least two optical data  
5 channels, comprising:

an optical waveguide formed in the module as a single waveguide piece with a bevelled end face that has a wavelength-selective filter associated therewith;

a transmission component emitting light that is  
10 coupled into the optical waveguide;

a reception component that receives light coupled out from the optical waveguide,

wherein light of one data channel travels in the optical waveguide and is reflected at the wavelength-selective filter and couples out to the reception  
15 component at an angle to an optical axis of the waveguide piece,

wherein light of the other data channel from the transmission component passes through the wavelength-selective filter and enters the bevelled end face, and  
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wherein a free beam region is formed between the bevelled end face and the transmission component and the reception component, respectively.

25 2. The module of Claim 1, wherein the end face of the optical waveguide is coated with a wavelength-selective filter, or a separate carrier with a wavelength-selective filter is arranged on the end face.

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3. The module of Claim 1, wherein the angle of the optical waveguide end face to the optical axis of the waveguide piece is substantially 60°.

35 4. The module of Claim 1, wherein the optical axes of the transmission and reception components run at an angle of other than 90° relative to one another.

5. The module of Claim 1, wherein the waveguide piece comprises a glass ferrule in which the optical waveguide is located and which is transparent to light of the wavelengths used.

6. The module of Claim 1, wherein the transmission component and the reception component are fastened on a common module housing and are positioned thereon at a defined angle to one another.

7. The module of Claim 6, wherein the transmission component and the reception component are hermetically fixed in advance on the module housing.

8. The module of Claim 6, wherein the module housing comprises defined stops for fastening the transmission component and the reception component thereto in a hermetically tight fashion.

9. The module of Claim 6, wherein the waveguide piece is preassembled on an insertion part that is configured for insertion into the module housing.

10. The module of Claim 9, wherein the insertion part and the waveguide piece are arranged in a hermetically tight fashion in the module housing.

11. The module of Claim 9, wherein the insertion part comprises a flange via which the insertion part and the waveguide piece are fastened in a defined arrangement in the module housing.

12. The module of Claim 11, wherein the waveguide piece is positioned in the module housing in such a way that light emitted by the transmission component is focused onto the end face of the waveguide piece.

13. The module of Claim 1, wherein the transmission or reception component is respectively arranged on a TO base plate that is inserted into  
5 corresponding holding regions of the module housing.

14. The module of Claim 1, further comprising a lens provided in the free beam region between the end face of the waveguide piece and the transmission  
10 component or the reception component, respectively.

15. The module of Claim 14, wherein the lens is integrated into the transmission component or the reception component.  
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16. The module of Claim 6, wherein the waveguide piece projects in a defined fashion from the module housing at its end opposite the bevelled end face.

20 17. The module of Claim 1, wherein the optical waveguide comprises a single-mode waveguide.